

### **REMARKS**

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-19 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the remarks as set forth below.

#### *Allowable Subject Matter*

It is gratefully acknowledged that the Examiner considers the subject matter of claims 10-14 as being allowable.

#### *Rejection Under 35 USC 102*

Claims 1-7 stand rejected under 35 USC 102 as being anticipated by Dyke et al. (US Patent 6,351,582). This rejection is respectfully traversed.

The Examiner states that Dyke et al. shows an Ethernet passive optical network including an optical ring with two ends, an optical line termination coupled to the two ends of the optical ring, a plurality of optical networks units each of which is connected between the two ends and defining a plurality of intersections with the ring, a plurality of 3-port passive optical splitting modules each of which is installed at an intersection and contains three optical ports where the three optical ports are connected using two-way passages to allow the network units to transmit and receive data by way of both ends of the ring.

Applicants submit that these claims are not anticipated by Dyke et al. The reference is used to distribute broadband and cable TV services to customers using optical fibers. Fiber distribution lines 211 and 213 are connected to drop point arrangements 223 and 224. Each drop point arrangement is linked to a number of subscriber network units. In the present invention, there is no discussion of the use of such a network to provide drop point arrangements for a cable TV optical distribution network.

Further, claim 1 specifically defines the 3-port passive optical splitting module as having 3 two-way passages connecting the three optical ports to allow the network units to transmit and receive data by way of both ends of the optical ring. While column 5, lines 31-34 discuss the drop point arrangements as having three optical splitters/combiners, it is not clear that this

arrangement provides three two-passages between the three ports. It is also not clear that these allow the network units to transmit and receive data to both ends of the optical ring. For these reasons, Applicants submit that claim 1 is allowable.

Claims 2-9 depend from claim 1 and as such are also considered to be allowable. Specifically, the Examiner has not applied this rejection to claims 8 and 9. Further, claim 2 further describes the 3-port passive optically splitting module as containing three sub fibers which couple to the optical splitters to form passages. This is not specifically defined in the Dyke et al. reference.

Claim 3 describes the splitting modules as having a plane-wave waveguide. While the reference discusses at column 5, line 60-64 that the arrangement can be a single integrated component such as a silicon planar waveguide it does not specifically define a "plane-wave waveguide". Accordingly, Applicants submit that these claims are likewise allowable.

In regard to claim 7, the Examiner states that the reference determines the location of the breaking point and refers to column 5, 16-67 and column 6, lines 1-49. Applicants have reviewed this section of the reference and do not see any indication of the determination of the location of the breakpoint. While the break itself is determined that there is no indication that its location is determined. For these reasons, Applicants submit that these claims are additionally allowable.

#### *Rejection Under 35 USC 103*

Claims 8, 9 and 15-19 stand rejected under 35 USC 103 as being obvious over Dyke et al. in view of the admitted prior art shown in Figure 4 of the present application. This rejection is respectfully traversed.

The Examiner states that Dyke et al. teaches the claimed invention except the waveguide division multiplexing system having a double port end and a single port end, an optical receiving unit, a coupler, an optical receiving unit, a coupler, an optical transmitting unit and a carrier sensor.

The Examiner refers to Figure 4 to teach a WDM system 144 having a double port end and a single port end, an optical receiving unit 143, a couple 145, an optical transmitting unit 147

and a carrier sensor 146. The Examiner feels that it would have obvious to one of ordinary skill in the art to incorporate this WDM system into the system of Dyke et al. The Examiner states that the motivation to do this would be to allow avoiding collisions.

First, Applicants submit that the Examiner has not demonstrated proper motivation. The Dyke et al. reference does not provide any teaching for the need to have a system to avoid collisions. The Examiner is merely making a statement of a desired result of the combination without showing any reason as to why one skilled in the art would look to the admitted prior art to find this solution. Accordingly, Applicants submit that there is no motivation to make this combination.

Furthermore, there is no teaching of how the two systems could be combined. In the description of prior art Figure 4 of the present application, the prior art is described as needing a 3xN optical splitter and an isolator in order to utilize this arrangement. As noted there, this not only increases the cost but makes the system more complicated. The present invention avoids this problem by utilizing the 3 optical port splitting module having three two-way passages. The prior art Figure 4 does not teach how this can be combined. Furthermore, Dyke et al. does not teach the use of the system as noted by the Examiner. Thus, Dyke et al. does not recognize how this multiplexing system can be utilized and the admitted prior art does not teach how to use that system with the three splitter arrangement. Accordingly, one of ordinary skill in the art would not look to combine these two. Thus, claim 8, 9 and 15-19 are not obvious over this combination.

In regard to claim 15, it is noted that the various steps of the method are not described in Dyke et al. and further are not described in the single paragraph which explains Figure 4. Thus, the paragraph starting on page 2, line 6 does not discuss filtering the signal, does not discuss verifying that the signal is transmitted by the network unit and does not discuss forbidding the network unit from transmitting the signal.

Similarly, dependent claims 16-19 include steps which are not seen in the description of Figure 4 such as that the network has a login activity, that the threshold is used to determine the signal after filter, that the threshold uses the wavelength for a determination and that the network

unit is controlled to transmit after verifying that no other network unit is transmitting. Accordingly, Applicants submit that claims 15-19 are further allowable.

It is further noted that they Dyke et al. patent shows that optical signals may be transmitted between end through ports by means of a linear arrangement and signals may be transmitted between at least one of the end through ports and one of the drop ports by means of the linear arrangement. The splitter/combiners can be inserted to form drop points in a ring or dual-homed passive optical network to provide flexibility in the provision of protection and network reconfiguration (Abstract). The present invention provides a number of other features which present a better solution to the problems of transmitting the signals, including a wavelength division multiplexing system having a double port end and a single port end being coupled to the three port passive optical splitting module by way of the single port end. It also shows an optical receiving unit connected to the double port end for receiving units from the optical line termination. It also shows a coupler which is connected to the double port end for receiving signals transmitted by other network units. As a result the present system provides an Ethernet passive optical network ring and a method of authorization and collision detection. This arrangement can prevent the whole system from breaking down when the network ring fails without the need for any additional active or passive optical devices. Thus, this invention can more effectively verify login users and prevent hackers from invading. Collision detection can be provided in order to reduce the chances of network collisions.

### *Conclusion*

In view of the above remarks, it is believed that the claims clearly distinguish over the patent relied on by the Examiner, either alone or in conjunction with the admitted prior art. In view of this, reconsideration of the rejection and allowance of all the claims are respectfully submitted.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse Reg. No. 27,295 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.


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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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